

St. Bartholomew's Hospital



JOURNAL.

VOL. V.—No. 10.]

JULY, 1898.

[PRICE SIXPENCE.]

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St. Bartholomew's Hospital Journal,

JULY 14th, 1898.

"Æquum memento rebus in arduis
Servare mentem."—Horace, Book ii, Ode iii.

Enuresis.

A Clinical Lecture delivered on June 17th, 1898,

By SAMUEL GEE, M.D., F.R.C.P.

(Reported by W. LANGDON BROWN, M.B.)

SOME time ago we had an instance of what in hospital wards is a rare disease, though outside it is common enough—I refer to enuresis. Enuresis (= mictus, in *lectis, vestimentis*, understood) is not a classical word; who invented it I do not know; it appears in Sauvage's *Nosology*, a book of the last century.

It must be distinguished from (1) cases of diuresis (excessive flow of urine), or cases where the urine is morbid; you

must carefully test the urine—if it be not normal you are not dealing with mere enuresis; (2) cases of disease of the urinary organs, such as stone; and (3) diseases of the central nervous system or in dementia. Epilepsy may be the cause. If an adult who has not been in the habit of doing so begins to wet the bed, this is strong evidence in favour of nocturnal epilepsy. Many people have nocturnal epilepsy without knowing it.

The subject is not unpractical. I have here notes of a case of a boy who was circumcised for enuresis, when he was really suffering from congenital thirst and consequent polyuria. Of course the operation could do no good.

First there is *enuresis nocturna*, which occurs when a child (for most of what I am about to say refers to children) is asleep. Sometimes the child wets the bed when not asleep, through fear of rising in the dark or mere indolence. The usual cause of *enuresis nocturna* is very deep sleep; some people sleep very deeply all their life—they are usually of a nervous temperament, and nervous diseases are common in such families. This heavy sleep sometimes concurs with a weak constitution and a low state of health. The heaviest sleep is mostly that which occurs in the first few hours. The bed is often wetted in the first two hours; another common time is early morning, soon after midnight. With many people sleep promotes the secretion of urine. Another reason is that reflexes are more active in sleep; a pretty example of this is seen in a baby asleep with an extended palm. On tickling the palm, the hand closes. So here are three reasons for nocturnal incontinence.

Enlarged tonsils and pharyngeal adenoids promote it. If you see a child asleep with such, you can understand what an effort breathing is. The child appears to be trying to swallow his own tonsils, and when he does get asleep at last he sleeps very heavily.

A second concomitant of *enuresis nocturna* besides deep sleep is dreaming. The child dreams he is passing his water, and does so; but this is much less frequent.

The second type of the condition is *enuresis spastica*, which you really might call "irritable bladder," but of course without structural disease such as cystitis. It may

occur both by day and night, or sometimes by day alone and not at night. The chief rough means of diagnosis from enuresis nocturna is that the incontinence is diurnal as well as nocturnal. As soon as the desire to pass water arises, the patient must go at once. In one of my cases the parents had the curiosity to count the number of times the boy passed his water in the day. He did so thirty-two times in the twenty-four hours, and yet when the urine was measured it did not amount to more than a pint. The urine is usually quite normal or, what is not uncommon in such cases, it contains an excess of urea. I wish I knew what this excess of urea means, but no one does. If a third of strong nitric acid be added to the urine, there is on cooling a large deposit of crystals of nitrate of urea. In these cases dilatation of the ureters and pelves of the kidneys may occur, and it is said that the urine then becomes of very low specific gravity.

As to sex, it seems to me that enuresis nocturna is more common in boys than girls, enuresis spastica more so in girls than boys. As to age, it is often continued from infancy, but sometimes children who have learned to hold their water begin afterwards to wet their bed; this often happens at seven or eight years of age. Enuresis in boys ceases at puberty, and may then be replaced by excessive nocturnal emissions, due to the same cause—profound sleep. In girls the influence of puberty is not so marked, and the condition may continue. You cannot depend on puberty in girls doing good, though it may. Marriage and childbirth are said to stop it in some cases, and Trousseau quotes an example of this. There may be a spontaneous cessation; or an intercurrent disease, such as measles, may check it. No doubt in some cases enuresis spastica is merely a bad habit. I remember two cases of ague in which, for purposes of analysis, the patients were required to pass urine every hour for a few days; when the analysis ceased it was found that the patients had got into the habit of hourly micturition, so that at first they could not hold their water much longer than an hour.

You should always search for a local source of irritation in cases of enuresis, such as long foreskin, smegma præputii, masturbation, ascarides. As to treatment, the patient should be kept very warm when in bed, and should wear a flannel night-gown, and perhaps sleep between the blankets. The influence of chill is often marked in these cases; it is said that if you thrust the hands of a drunken man into cold water he passes his urine into his clothes. Flannel also has the advantage that if the bed be wet the patient is not so chilly. The diet should be attended to. If butcher's meat be entirely cut off, this alone effects a cure in some cases. It is only common sense to rouse the child *thoroughly* (not always an easy thing to do) an hour after he has gone to sleep, and get him to pass water; but the time when rousing is necessary must be discovered by observation in each particular case. Two drugs are useful, bella-

donna and cantharides. Belladonna was first used in the treatment of these cases by that eminent French physician Bretonneau. It should be given in a full dose at bed-time. What the full dose for any individual is you must find out. It is well to start with ten minims of the tincture or a quarter of a grain of the extract. An accidental overdose has been known to produce alarming belladonna poisoning (which is seldom fatal), and to cure the disease where official doses did no good. In cases of irritable bladder you should give it in a different way; administer it several times a day, and do not give it up after a few days in despair. Cantharides is a more risky remedy; you do not wish to give your patient hæmaturia. Pharmacopœial doses should be rigidly kept to. Much depends on the general health, especially in cases of enuresis spastica. In them "tonics," such as strychnine, sometimes do more good than belladonna. Some children wet the bed only when overwrought and tired. When it is merely a bad habit the child must be treated firmly and punished. Admission to hospital, or in a different class of life sending to school, may cure it; sometimes on coming back for the holidays the habit recurs.

Circumcision is a mode of treatment adopted blindly in many cases. Unless there be some præputial irritation there is no reason for the operation, and experience shows that in most cases it does no good. I knew a boy aged nine for whom circumcision was recommended and performed, not because he did wet his bed, but lest he should do so. Six months afterwards he began for the first time to wet his bed.

A Lecture by John Abernethy.



WE have much pleasure in publishing the subjoined letter from Mr. George Hurst, of Bedford, which we venture to think is of unique interest. Since John Abernethy was born in 1764, elected Assistant Surgeon in 1787, Surgeon in 1815, and died in 1831, Mr. Hurst is probably the only man now living who ever heard him lecture. Mr. Hurst himself is only one month younger than the century, and seeing that it is seventy-eight years since the occasion he speaks of, his communication in itself involves a remarkable achievement of memory.

DEAR SIR,

Any recollections of your former distinguished surgeon, Mr. John Abernethy, will, I believe, be interesting to the readers of your JOURNAL. I have pleasure in communicating, therefore, something of the man as he appeared to me from my own observation.

My recollection carries me back to the early part of this century, as I was born in February, 1800, and the distinguished men and events of that early period are to my mind as fresh and perfect as recent occurrences.

About the year 1820 I heard with satisfaction the celebrated Mr. Abernethy lecture, and his style, manner, and simple elocution impressed me greatly. He has been represented as eccentric, but as a public speaker he was clear, distinct, and impressive. One of the subjects treated of in the lecture I heard was "Fungus Hæmatodes," which was so lucidly dealt with as not easily to be forgotten. Beyond his excellences the only thing peculiar in his manner was his habit of exemplifying by contortions of his countenance the sufferings of the patient dying of a painful disease. At the conclusion he would assume his usual placid deportment.

At that time there were many tales current of his rudeness to patients. If any of them were accurate, as he was not an avaricious man, he was perhaps actuated by a desire of reducing the number of consultations his high reputation procured, which to him had become oppressive.

By the pupils of the Hospital he was esteemed as the highest medical authority of the period; and each student on leaving the Hospital considered himself as only second, having received instruction from that great man's discourses.

As so few can possibly now be remaining who remember anything of the personality of this eminent member of your Hospital, this slight sketch may be interesting to your readers.

I am, yours faithfully,

GEORGE HURST.

KINGSBROOK HOUSE, BEDFORD;

May 27th, 1898.

On the Evidences of an Early Tubal Gestation before and after Rupture of the Sac.

A Paper read before the Abernethian Society, Feb. 3rd, 1898,

by W. GLADSTONE CLARK, F.R.C.S.



WOULD in the first place draw your attention to the importance of some knowledge of this subject from the point of view of the practice of your profession. Cases of this form of pregnancy are so frequent that you may all reasonably expect to come across them from time to time in general practice; but, on the other hand, they may be considered so infrequent that, unless a constant look-out is kept for them, they will altogether escape you from their resemblance to other diseases of women, particularly to different conditions connected with abortion in the early months of pregnancy. Without a suspicion of the nature of the case, you will almost inevitably fail in making a correct diagnosis; and this in turn will lead to treatment such as must further endanger or actually sacrifice the life of your patient. It is this difficulty and this importance of diagnosis, as well as the debatable treatment of any individual case, which imparts the greatest interest to this subject. It is this which places extra-uterine gestation on the same footing as such serious surgical diseases as strangulated hernia, and far removes it from those inevitably fatal diseases in which a differential diagnosis is chiefly of pathological interest, and can have at the most but little practical influence on either treatment or prognosis. For example, compare the importance of distinguishing between a strangulated and a merely irredu-

cible hernia, or between uterine hæmorrhage dependent on an extra-uterine or an intra-uterine pregnancy on the one hand, with the at present merely mental satisfaction which might be obtained from being able to say whether a patient with universal glandular enlargements were suffering from round-celled sarcoma, lymphosarcoma, lymphadenoma, general tuberculosis, or leucæmia. In these latter diseases pathology, though advancing, has not yet taught us treatment, whereas the knowledge of the condition and means of cure of a strangulated hernia is of comparatively old standing, and the recognition of extra-uterine gestation as a common and not necessarily fatal accident really began with Sir Spencer Wells's experimental ovariectomies, which commenced in 1858.

Now will you follow me while I review briefly the vexed pathology of this disease before passing on to the diagnosis, which I wish chiefly to bring before your notice in this paper? I would gladly pass over the pathology altogether, but some idea of the effects of the erring ovum and of nature's self-assertion is most necessary for a just appreciation of the latter part of my subject.

As research goes on, and cases accumulate, it appears to become more and more certain that every non-uterine gestation is primarily tubal in its habitat, and we may therefore, with little if any departure from the truth, limit our attention to these cases. Indeed, no case has been recorded of recent years which does not admit of the less romantic tubal origin. The antecedent improbability of an extra-tubal gestation is itself very great, for we must then suppose that the peritoneum or the ovary takes upon itself a function for which it is totally unprepared, namely, that of developing a placental site. We have learned, indeed, in our biological and other studies that one organ of the body may to some extent take on the functions of a disabled one, or that really complex organs may be developed in most unexpected parts—notably, perhaps, the aptitude with which certain molluscs possess themselves of eyes in any likely situation. But observe, they have never developed even a made-in-Germany placenta. Vicarious placentation is on its trial, and can hardly escape with its life. In the same connection a good deal has been made of the digestive power of the peritoneum, which, though real enough, would by itself be much less convincing, for spermatozoa have been found in the neighbourhood of the ovaries of rabbits and other animals after a sojourn of presumably several days. It is probable, too, that secondary malignant growths are in some instances started from a primary carcinoma of the ovary or stomach by a process of auto-inoculation of the peritoneum, and attempts at grafting malignant disease on the peritoneum of the lower animals have at times been successful. The question of peritoneal digestion does not affect a secondarily abdominal gestation, for here the peritoneum has been already injured by the presence of the blood. It seems probable that the peritoneum will absorb in the course of time any cells foreign to itself; but the above facts show that it is not in a great hurry about it. Witness, also, the tubal gestations where the corpus luteum has been found in the ovary of one side, and the ovum has passed from one side of the pelvis to the opposite tube. Believe, then, that in extra-uterine gestation the ovum remains behind in the place where it has been fertilised in the Fallopian tube, the upper part of Müller's duct, which for the nonce takes upon itself the work of the more specialised uterus, the conjoined lower part of Müller's ducts, and consider the causes of its delay.

The normal progress of the ovum along the tube must depend on the action of the cilia of its epithelial lining and on peristaltic contractions of its muscular wall. We may, then, on theoretical grounds suppose that any pathological condition affecting either factor would be a frequent cause of a tubal gestation, and as a matter of clinical experience we find that an attack of "inflammation" is a very frequent precursor of this disease. How the inflammation has produced the result we can but surmise. It may be by an endo-salpingitis destroying the cilia, it may be by adhesions interfering with the proper contractions of the muscular coats, or by atrophy of the muscular coats—a condition said to be not uncommon after gonorrhœal infection. In other cases it appears to act by diminishing the lumen of the tube by twisting or by adhesions, or by a condition more or less resembling stricture of the urethra. That actual obstruction is an important factor we must not rashly judge from the minuteness of the ostium uterinum, but in some cases there has been found a recognisable obstacle in the shape of a polypus or an intra-uterine twin, and the proportion of twins among tubal pregnancies is not inconsiderable.

I have so far endeavoured to emphasise two facts, viz. that every case of non-uterine gestation is *tubal*, and that the cause is most commonly to be attributed to a *diseased condition of the tube*. We have next to consider how the growth of the ovum leads up to a crisis, and what is the nature of that crisis. It is indeed obvious that the

increasing distension of the tube must eventually end in rupture of that frail substitute, and that it may yield in one of two directions, either into the peritoneum or into the substance of the broad ligament, is a fact which is suggested by anatomy and fully supported by the conditions found at operation and at the autopsy. It is equally certain that the rupture must be accompanied by hæmorrhage, which hæmorrhage is generally formidable, often fatal to the mother, and almost always serious. It is at first a matter of surprise to the student that this should be the case, for there are no large vessels in the tube, and a surgical training has advanced a long way when one realises that a serious loss of blood may result from a trivial wound under certain conditions—as, for example, in hæmophilia, where there is little tendency for the blood to clot in the injured tissues. A similar condition prevails in hæmorrhages into the peritoneum where there is no contraction of divided vessels, and where the cells are apparently opposed to the breaking down of the leucocytes and the natural formation of fibrin ferment. The other extreme immediately presents itself, viz. that hæmorrhage into the general peritoneal cavity is necessarily fatal; but this is equally untrue, for all gynecologists have had opportunities of watching the formation of a collection of fluid in the pelvis, which becomes more solid in the course of twenty-four to forty-eight hours, and may then be rapidly absorbed—a sequence which indicates with certainty the hæmic nature of the effusion. Recovery has also been recorded, not very infrequently, where the bleeding has taken place into other parts of the abdominal cavity. These considerations will serve to emphasise the important fact that nature, though handicapped, may still arrest the hæmorrhage from a tubal rupture. That she does so frequently is proved by the pregnancies which continue after the symptoms of rupture, as well as by those hæmatocèles from which the patients recover without operation.

Rupture is accompanied in the great majority of cases by death of the fetus. How this is brought about we need not inquire, for here our care is for the mother and not for the child. Let it suffice, that if our patient survive, the ovum has a utilitarian funeral, being in these early stages completely absorbed. This death of the ovum is as necessary for a cure by nature's own self as the arrest of the hæmorrhage.

We see, then, that the event of rupture is hæmorrhage, which may be fatal to mother and child, or to the child alone, and there remains the third combination where it is fatal to neither. In this case the fetus continues to grow in various situations, most commonly, perhaps, in the broad ligament, and this is followed, usually at no great distance of time, by a secondary rupture, resembling in all essentials the primary rupture, but owing to the greater development of the ovum this secondary crisis may be expected to be more severe. This variety is best described as *secondary intra-ligamentous gestation*. Less commonly the ovum continues to grow in the peritoneum, a condition termed *secondary abdominal gestation*. It is the last variety, much less frequently met with than the preceding ones, which has given rise to the mistaken views of primary ovarian and abdominal pregnancies. Here, too, the patient is subject to a new danger, owing to the impossibility of delivery; and although an abdominal fetus is usually productive of ill-health throughout its course, the patient's condition does not become serious till the death of the fetus, which may be expected to take place at term, or a little earlier. I regret that time as well as lack of material will not permit me to pursue these most important and instructive cases, and for the rest of the paper I must confine my attention to the clinical aspect of an early tubal gestation and its rupture.

Let me remind you of the symptoms of this disease by quoting from the notes of one of our hospital cases. With the symptoms I shall include the history of the case, for this also is obtainable from the patient by careful inquiry, and in every gynecological case a preliminary estimate of its nature must be made before subjecting the patient to an examination, for a routine examination cannot be advocated in these as in ordinary medical and surgical cases; and it becomes the first duty of the medical man to decide whether a pelvic examination is or is not necessary.

E. S., æt. 33, who had been married fourteen years, stated that she had only borne one child, about one year after her marriage. Her confinement was natural in every way, but she suffered from a severe attack of inflammation during her puerperium. After recovering from this, menstruation occurred regularly for thirteen years, up till January 26th, 1896. Following this she had amenorrhœa till April 9th, 1896 (ten weeks), ending in several attacks of uterine hæmorrhage, and one of these was accompanied by labour-like pains, and she became very faint and ill.

Now this is as full an account as one can hope to obtain, con-

taining as it does all the leading points (except pain during the first months) any of which may be wanting in other cases, and would justify a strong suspicion of an extra-uterine pregnancy; at the same time we must admit that everything could be explained by an abortion. Let us then consider separately the significance of each of these points upon the diagnosis. In the first place, is sterility an invariable antecedent? No, decidedly not; nothing is invariable, least of all in disease. Yet a *period* of sterility very frequently does precede an extra-uterine gestation, in that the causes of acquired sterility are those which we have seen tend to interfere with the passage of the ovum down the tube. These are, broadly speaking, of a septic nature. The organisms are in most cases those of an ordinary septic inflammation, and are therefore most liable to produce their effect after childbirth or abortion, making their way along the tubes to the pelvic peritoneum, and impairing the functions of both these structures. In the other cases the organism appears to be the gonococcus, which is well known to be a most frequent cause of acquired sterility, apparently by sealing the ends of the tubes by a plastic inflammation, but it doubtless plays its part in the production of extra-uterine pregnancies. From this it follows that the subjects of this disease have generally advanced some years in their life of sexual activity, in that they have been longer exposed to the risks of these antecedent infections. As a matter of fact, they are nearly all between twenty-five and thirty-five years of age.

When the obstruction is due to one of twins, there can hardly be any period of sterility, and I have before me the notes of two cases of extra-uterine pregnancies in primigravidae, neither of which was preceded by sterility. The first was in a woman aged thirty-four, and occurred two years after her second marriage. It is true she had been barren for four years to her first husband, but this might as justly have been attributed to failure of fertility on the side of the husband. There was a history of inflammatory trouble about the time of her first husband's death. The second case is less equivocal; it occurred in an unmarried country girl of nineteen, of presumably regular habits. This case was unusual also from the youth of the patient. There was no evidence of gonorrhœa, and though no fetus was found post mortem, chorionic villi were readily demonstrated by the microscope.

We see, then, that while acquired sterility after an attack of pelvic inflammation is of peculiar significance, we must hesitate to lay stress on the absence of a history either of sterility or of inflammation.

What is the significance of the amenorrhœa? A period of amenorrhœa following on a previously regular menstruation is extremely constant, in that it is the chief symptom of early pregnancy, and yet the menstrual history is sometimes entirely misleading, and that for more than one reason. Thus in the latter of the cases just referred to, menstruation had been perfectly regular, the fatal rupture having taken place about the time the next period was expected. A merely apparently regular menstruation is a more common state of affairs, owing to the patient's difficulty in distinguishing the irregular hæmorrhages, when slight, from the menstrual flow, but if the subject be pursued it can generally be discovered that the losses are irregular, and further that they are associated with unusual pain. If the patient's account be not clear, it can fairly be assumed that the menstrual function is disordered, but this is by itself no guide at all, and little reliance can be placed on an undoubted period of amenorrhœa in women who have been previously irregular. It is perhaps a matter for surprise that a definite history of amenorrhœa can so often be obtained, considering that disease of the pelvic organs is a precursor both of irregular menstruation and of extra-uterine pregnancy. It is very unusual for the hæmorrhages to begin before the sixth week or be delayed after the tenth week. It must also be remembered that menstruation may be regular during early pregnancy. The following case illustrates this difficulty where the history given was one of menorrhagia. H. H., æt. 29, had borne three children, but had not been pregnant for six and a half years. On January 24th, 1897, she appeared to have a normal period with rather increased loss. On February 24th she had a still more profuse loss, and again on March 21st. She had no unusual pain, but admitted that the flow continued between the last three periods in very slight amount. Previously she had been quite regular, and events proved that these three periods were really the irregular hæmorrhages of an extra-uterine pregnancy. The fatal rupture occurred on March 26th. A more extreme case would be one in which the menstrual flow was usually profuse, and I have met with one such history in what may have been a case of pelvic hæmatocèle due to a ruptured gestation sac.

Of the other symptoms of pregnancy, morning sickness, when it occurs, may be a valuable indication, but it is more often absent. A fullness of the breasts may also be noticed, but is not present as a rule

in the earlier cases. Thus in only two out of twelve consecutive cases was the former of these two symptoms noticed, and in one of these twelve, when recourse was had to operation as late as the sixteenth week, the patient had noticed no changes in the breasts. Remembering that patients are mostly multiparæ, we need hardly look for any marked subjective sensations of pregnancy, least of all in the poorer classes, who are notoriously unobservant of themselves, and whose minds do but indifferently appreciate the finer pains and inconveniences of existence.

We have now criticised the history preceding the occurrence of a tubal gestation, and those symptoms produced by the pregnancy; we may now consider the symptoms due to that pregnancy being extra-uterine.

Of these, the one which most attracts the attention of the patient is the pain, which may be so severe as to give evident signs of its presence to the physician. The pain is of constant occurrence, and may be of three distinct varieties. The first is due to the mechanical distension and irregular contractions of the tube. It is spasmodic and colicky in its nature, and is frequently present from the very beginning of the pregnancy. At first troublesome rather than extreme, it may be regarded as a trivial matter by the medical attendant if consulted thus early, and the patient herself may accelerate rupture by trying to work it off by exercise, like one would an ordinary strain. It is commonly referred to one or other ovarian region. If rupture be long delayed it becomes very severe. The second variety is that described as bearing down pain, "like labour pains," and begins at or about the time of rupture of the sac. It appears to be of a rhythmic character, and produced by contractions of the uterus itself. It is invariably accompanied by uterine hæmorrhage, and about this time is passed the decidua cast. The duration of this pain is mostly from twelve to twenty-four hours, and confines the patient to bed. The third form of pain is peritoneal pain, and is produced by the effused blood or by its distension of the broad ligament; in fact, it is due to a perimetritis, and with accompanying severe constitutional disturbance, often leads to the imperfect diagnosis of peritonitis.

The hæmorrhage does not as a rule distress the patient greatly, and is put down to a "miscarry" by hospital patients, at all events; and according to the amount of bleeding, the "miscarry" is either a "bad" one or a "slight" one. In many cases after the labour-like pains have ceased, and the patient does not find herself well, she is under the impression that she has miscarried, a fact she asserts with such confidence that she will inevitably deceive the unwary investigator. Thus, last November two cases of extra-uterine gestation were admitted to Elizabeth Ward from the out-patient department, where in each case the clerk in his notes had recorded a recent miscarriage. It is most necessary for the physician to assure himself of the truth of such a statement before proceeding further, or he may make a false assumption, inevitably blinding himself to the real condition of affairs. I repeat that no recent miscarriage should be written off as such on the patient's unsupported statement. The other points to be noted in the hæmorrhages are their irregularity and their accompaniment of pain. I have already quoted one case where they simulated three successive menstrual periods rather more profuse and painful than normal, and would now draw your attention to their variability—on the one hand being so abundant as to leave no doubt in the patient's mind that she has miscarried, on the other hand being so scanty that their significance may be overlooked by the medical attendant. I cannot quote a case where they have been completely absent at the time of rupture.

With reference to the source of the bleedings, it may be said that the blood always comes from the uterus itself, and not from the tube. The minute ostium uterinum must be readily occluded by any clot, were it not already rendered functionless by the growth of the ovum. Now each menstruation is the sign that an unrequired decidua is cast off, the failure of fertilisation being the natural cause for the preparation of a new receptacle for the next ovum if it become fertilised. So, too, the amenorrhœa of pregnancy is the sign that the decidua has become occupied by a fertilised ovum, and undergoing further development is not cast off till the birth of the child by what, in the light of this comparison, would be *une grande fluxe*, and I have no doubt that the hæmorrhage of parturition is strictly analogous to that of the menstrual cycle. Thus the growth of an ovum in the tube must place the uterus in a quondary, whether to cast off the decidua because it is useless, or to retain and nourish it because of the pregnancy. I think the existence of these two opposed impulses not only explains the hæmorrhages, but should lead us to expect them as they are—in one case beginning early, slight and comparatively painless, resembling an imperfect menstruation; in another case delayed but more profuse, and accompanied

by uterine pains and often by the delivery of thickened decidua, resembling an imperfect labour. Why this last event is coincident with the rupture of the tube cannot be precisely defined, but it should be remembered that the rupture is often the termination of pregnancy, and like labour itself may be supposed to have a special relation to the menstrual cycle. That the hæmorrhages must be irregular in presence of such an irregularity of the function of the tube, is but to be looked for when we bear in mind how easily the normal menstrual function is disturbed, or how small a cause may terminate a normal pregnancy. Similarly we may explain the varying date of rupture of the tube, which may only in part be due to mechanical principles.

The last and most prominent symptom is the occurrence of one or more attacks of fainting, accompanied by severe abdominal pain. I prefer to call such an attack a faint rather than a condition of collapse, in that it is dependent on an internal hæmorrhage, and marks in every case the rupture of the tube; which means that although the condition is similar to that produced by the rupture of a hollow viscus, it differs in that it depends not only upon the presence of a foreign body—the blood—in the peritoneum, but also upon the actual loss of that blood. The formation of a comparatively small hæmatocele is productive of a well-marked faint, but that the hæmorrhage becomes all-important later is a fact which cannot be too clearly impressed. I will leave the consideration of the internal hæmorrhage till I speak of the signs of a tubal gestation. Suffice it now to note that this alarming condition in a pregnant woman is the symptom, *par excellence*, of a tubal rupture, in that it can be only produced by an abortion or mole when the external hæmorrhage is enormous, using the word nearly in its literal sense and not as a nineteenth century superlative.

(To be continued.)

The Life and Works of Sir Charles Bell.

Being the Wix Prize Essay for 1898.

By W. E. LL. DAVIES.

"*Nam et ipsa scientia potestas est.*"

TOWARDS the close of the last century many influences were at work in Scotland which were to produce in the course of one generation a great change in the habits and thoughts of the Scotch people. The union with England had bereft Scotland of her parliament, and with the parliament had disappeared a host of intriguers who had more or less stifled the energies of the nation. From this time rivalry with England in culture and intellectual study, as well as in industrial and commercial pursuits, had fostered the natural ambition of every Scot. At home eminence in political life was all but excluded, but the energies of the race were devoted to other pursuits which might place her on a level with her richer sister. Before the century had closed these efforts, pursued amidst many disadvantages, had resulted in the formation of Scottish schools of agriculture and literature, and the learned professions boasted men of no small eminence. Chief amongst these were Playfair and Dugald Stewart. "The house of the latter was the resort of all who were most distinguished for genius, acquirement, or elegance in Edinburgh, and of all foreigners who were led to visit the capital of Scotland."* Amongst the younger men of the day were Lord Brougham, Sir Walter Scott, Horner, and Jeffrey, and the brothers Bell.

John Bell, the eldest, was gifted with rare powers of a varied and uncommon quality. Devoted by his father to the medical profession, out of gratitude for a successful operation of which he was the subject, he became one of the most renowned surgeons of his time. Between 1786 and 1796 he lectured with great success on surgery in Edinburgh, and formed for himself a high reputation, his fame becoming second to none in Europe.

George Joseph Bell, the third son, born in 1770, was eight years younger than John. Though he had not had the advantages of a thorough education in early youth, by pluck and perseverance he succeeded in becoming one of the greatest lawyers of his day.

* Stewart, Colonel Matthew, *Memoir of late Dugald Stewart*, Edinburgh, 1838.

Moreover, he gathered around him a circle of legal friends who were destined to shine in the highest realms of literature and law. Sir Walter Scott, Lord Jeffrey, Brougham, Horner, Cockburn, and Moncrief were amongst his closest acquaintances, and through them he was well in touch with all new movements in the intellectual life of Great Britain. His great work on the laws of bankruptcy, which was afterwards expanded into a profound commentary on mercantile law, will always remain as a monument of his learning and logical power. He ultimately accepted the Chair of Scots Law in the University of Edinburgh.

Charles, the fourth son, was born in 1774. Of his early career it will be necessary to speak at greater length.

The Bells were descended from an ancient and honorable family, resident in Glasgow and the neighbourhood for nearly three centuries. They reckoned amongst their ancestors many who had made names for themselves in the learned professions. Their grandfather, John Bell, was minister of Gladsmuir, an orator of no mean ability, and their father, the Rev. William Bell, was a scholar of considerable repute. Charles, the youngest son, was only five years old when his father died, so that his training and education devolved on his mother. He was a thoughtful, ardent, desponding yet ambitious boy, chained and subdued by an inability to master the ordinary schoolboy tasks—inability more imaginary than real, as it was not his incapacity for speed but his starting too far behind in the race that was the cause. One can thus understand, after the previous poor training, how the two years which he spent in the High School were years of torture and degradation. But it soon appeared he was no ordinary youth. Education, he himself said, he had none beyond what he learned from his mother. His real training, no doubt, was the example of his brothers. John had become a celebrated man while Charles was at school, and George was at the Bar when Charles was seventeen. From their example and from George's counsel he gained the spark which fired his ambition. He soon discovered where his strength lay. In exact science he began to find all things easy, and he possessed, like his brother John, a rare facility with his pencil, which was fostered by his intimacy with David Allan, a painter of considerable merit. Rambles round Edinburgh with George, during which they dreamed ambitious dreams and built castles in the air, formed no slight part of his early training. George recounts one ramble where they formed the magnanimous resolution that each should write a book, and the walk bore fruit in the lawyer's *Commentaries on the Law of Scotland* and the young surgeon's *System of Dissections*. Such was the training with which Charles Bell started as the assistant of his brother John, to whose profession he had been long destined. Such had been his progress that George says of him, "Charles's natural clearness of head and neatness of hand and the vigorous correctness of his conceptions made him an admirable surgeon and one of the first anatomists of his day when he was yet a boy not entered on life." Charles Bell's position as John's assistant was probably more useful to him than pleasant. Their disparity in years and a dash of impatience on the part of the elder brother rendered their association not quite on an equal footing. But whatever might be the roughnesses he may have encountered, Charles's sunny temper seems to have made light of them all. In his brother's energy and vigour he probably found an unceasing spur to his own powers of thought. His admiration for him was intense, and the amount he learned from him, when he prevailed on him to pour out his stores of knowledge, he always referred to as invaluable. "He did dunch and press me," he writes after his brother's death, "but since I have lived with him I have scarcely enjoyed what may be called conversation." Charles Bell remained associated with John till 1804. Previous to 1798 his duties were mainly confined to the dissecting rooms, furnishing his brother with drawings and preparations, in which he was singularly adept, and assisting him in illustrating his surgical and anatomical works, to some of which he contributed. In 1798 Charles applied for admission to the College of Surgeons, Edinburgh. Owing to professional jealousy or discord, an attempt was made to disqualify John's pupils on the ground that he had been admitted irregularly fifteen years before, and it required a threat of legal proceedings before the College would admit Charles. From that time Charles assisted John in his course of lectures, and their success was immense. Charles published at this time, in two volumes, his *System of Dissections*. In the preface he describes the need of such a book,—as in elementary text-books of anatomy at the time the description of parts was not adapted "to the limited and successive views which in dissection is absolutely necessary; but on the contrary, the anatomy of any part to be dissected, or of any part implicated in a great operation, had to be collected from different sources, muscles from one place, blood-vessels from another, and

nerves from a third. The descriptions were not such as to create interest in the student, and did not exhibit the dependence of parts on each other." The object of the work he states was "to serve as an assistant to the student, in acquiring a knowledge of practical anatomy, in gaining a local memory of the parts, in learning to trace them upon the dead subject, and to be able to represent them in his own mind on the living body."

This book is dedicated to Dr. Daniel Rutherford, Professor of Botany in the University of Edinburgh, and Physician to the Royal Infirmary. It is needless to point out the value of such a book in the dissecting room at that time, and its value was enhanced by some splendid engravings. Young Bell's publications brought him considerable reputation, chiefly from his skill as a draughtsman, for he drew his own diagrams, and thus he became well known to the profession in England as well as in Scotland. He was a very good operator, rapid and resolute, and was popular as a lecturer. But owing to some quarrel amongst the medical profession in Edinburgh at the time, in which his brother John had taken a prominent part, the managers of the infirmary forbade any surgeon who had not attained a certain seniority to operate within its walls. This edict excluded both John and Charles Bell. The former ceased to lecture, and the latter resolved to quit Edinburgh and try to make a name for himself in London. It was at this time that his real struggles began. He went to London almost without a friend, and most of those whom he consorted with on his arrival were refugees like himself. He often dined with the Edinburgh Club, "about fifteen of us in all, mostly of the law, all except Sydney Smith and Elinsby the Grecian." Shortly afterwards, July, 1805, he dined with Longman, "All Scotch—Horner, Brougham, Allen, Sydney Smith, and Abernethy. No one will interfere with my language." In his first few months he went sometimes to a play and heard Grassini and Catalani, and sometimes to the House of Commons to hear Pitt, Fox, Sheridan, and Whitbread, and his remarks about some of these orators are scarcely complimentary. He started with hardly a professional introduction excepting such as his reputation gave him. He called on Dr. Matthew Baillie, the morbid anatomist, who showed him great kindness, Wilson, the anatomist, Abernethy, who was very kind and cordial, and Sir Astley Cooper, who was civil; but the greatest sympathy came from Lynn, the surgeon at the Westminster Hospital, and Dr. Maton, the Court physician. Nevertheless he was about as solitary as a man could be, and roamed about as he had done in Edinburgh, dreaming dreams and building castles in the air. "In short I was as romantic as any man could be, though the prevailing cast of my mind was to gain celebrity and independence by science, and perhaps that was the most extravagant fancy of all."

In 1806 he published his essays on the *Anatomy of Expression*. He had brought the manuscript with him to London, and at first found a difficulty in obtaining a publisher. West, then President of the Royal Academy, advised the publishers to take it, and it subsequently passed through several editions. The book, however, at once established the reputation of its author and assumed the rank of a standard work. It was not, however, the first book of its kind, as there had been two books written previously similar to it, the one by Le Brun and the other a work published by Dr. Brisbane in 1769. The former work had been abandoned as worse than useless by every student who had been taught to resort to it, as his view of anatomy was not scientific or precise, and many of his sketches were inaccurate in this very particular. Dr. Brisbane's book, *The Anatomy of Painting*, contains little more than the six tables of Albinus, with a confession of the author's ignorance of the art of design and a wish that some more competent person would undertake the work. The object of Bell's book was to show to painters the importance of anatomical study. The arrangement is not always happy, and in treating the more abstract and disputable parts of the subject there seems to be a want of simplicity in his statements. The author himself seems to feel this, for he tries to remedy it by repetition. In his first essay, after shortly explaining the extent of the subject which the author proposed to illustrate, he treats at some length of the errors into which artists are apt to be betrayed by the study of the antique and by that of the academy figure. In the second essay he treats of the skull and different forms of the head, chiefly as indicating different periods of life. In the third he treats of the muscles of the face of man and the lower animals. The fourth seems to be the most interesting, as it treats of the expression of passion as illustrated by a comparison of the muscles of the face in man and in the lower animals. Laughter he thinks peculiar to man, as well as expressions of hope, admiration, despair, and many other emotions.

The work closes with pointing out the distinctions between the

position of a man in sleep and in death. The sketches by which it is illustrated do great credit to the taste and talents of the author; they are exceedingly striking and expressive without anything of commonplace or caricature. "The whole work is very interesting, as it explains the mechanism of familiar movements of expression, and it also criticises well-known works of art, but the scientific treatment is not very deep." It was exceedingly well received both by the medical profession and by artists, although the sale was slow. Flaxman and Fuseli covered him with compliments, and the queen read it for two hours,—on hearing which Bell irreverently exclaimed, "Oh! happiness in the extreme that I should write anything fit to be dirtied by her snuffy fingers." If Bell had done nothing else the work stamped him out as a man of learning, originality, and genius. However its main importance lies in the fact that it was a stage on his path of discovery. His book made him famous but not rich. The means of starting in practice and as a lecturer were still to be found—no easy task in London. At last he took a house in Leicester Square, which had been the residence of Speaker Onslow, and, as he found afterwards, the scene of the exhibition of the Invisible Girl, the mechanism connected with which he discovered in raising some boards of the flooring. He started with forty listeners at the opening anatomical lecture in January, 1806, and only three pupils. This must have been very discouraging to him, and in his letters to his brother George at this time he talks of returning to Edinburgh. Gradually, however, practice began to flow in his direction, and at the end of four years and a half he writes to George, "My little red book says now £990; D—'s fee will make it £1000. That is a comfortable reflection to come to Scotland with." The next year he writes, "On March last I had £1000, this year I hope to run near £1500." He was now on what seemed to be the highway to fame and fortune, and in 1811 he married. The lady, Miss Marion Shaw, was the sister of his brother George's wife, and whatever clouds at times overshadowed the rest of his career, this union seems to have been a source of unchanging sunshine. He then left his dull quarters in Leicester Square and removed to Soho Square, where his earlier married years were spent. Meanwhile, however, though struggling with his earlier difficulties, he was following out a clue which he had long before laid hold of, a clue which enabled him to place the coping stone on his fame. In one of his letters which he wrote to George dated 26th November, 1807, he says, "I have done a more interesting *nova anatomia cerebri humani* than it is possible to conceive. I lectured on it yesterday. I prosecuted it last night till one o'clock, and I am sure it will be well received." He was just on the brink of his great discovery. The stages by which it was given to the world were characteristic of him, and, as regarded himself and his fame, eminently injudicious. He printed in 1811 for private circulation among his medical friends, a pamphlet which was entitled *An Idea of a New Anatomy of the Brain submitted for the Observation of the Author's Friends*. A copy of this pamphlet belonging to Sir Joseph Banks is in the British Museum with the following inscription:—"With Mr. Bell's respectful compliments, 34, Soho Square." In this pamphlet Bell describes the teaching of the anatomical schools with regard to the brain and nerves, and gives the first of his own speculations on the subject, which he concisely states in the following words:

(1) That the cerebrum and cerebellum are different in function as in form.

(2) "That the parts of the cerebrum have different functions, and that the nerves which we trace in the body are not single nerves possessing various powers, but bundles of different nerves, whose filaments are united for the convenience of distribution, but which are distinct in office as they are in origin from the brain.

"That the external organs of the senses have the matter of the nerves adapted to receive certain impressions, while the corresponding organs of the brain are put in activity by the external excitement.

"That the idea or perception is according to the part of the brain to which the nerve is attached, and that each organ has a certain limited number of changes to be wrought upon it by the external impression.

"That the nerves of sense, the nerves of motion, and the vital nerves are distinct throughout their whole course, though they seem sometimes united in one bundle; and that they depend for their attributes on the organs of the brain, into which they are severally attached. The view I have to present will do away with the difficulty of conceiving how sensation and volition should be the operation of the same nerve at the same moment; and it will show how a nerve may lose one property and retain another."

In the same work Bell states why these facts had not been

discovered before. The only attempt made to distinguish the uses of nerves had been by performing experiments on the trunks of nerves, at a distance from their origins, and where they had formed frequent connections in their course with numerous others coming from totally different parts of the brain. But the mode Bell adopted, and which was the key to all his disclosures, was that of examining the nerves at *their roots*—that is to say, close to the divisions of the brain or of the spinal cord from which they took their origin.

Thus this work published in 1811 contained a clear indication of his discovery. This fact is important, as it conclusively proves Bell to have forestalled Majendie, who at a later date claimed these discoveries. Whether disheartened by the apathy of his brethren with regard to this discovery, or intent on further discovery, he threw aside this marvellous triumph of research as if his task were completed, and little more was heard of it until he proclaimed it to the Royal Society in 1821.

The first ten years of his married life were on the whole very prosperous, and raised his professional position to a great height. He became part proprietor of the great Anatomical School in Windmill Street which John Hunter had founded. There he lectured for a great many years, and founded a very valuable museum. He was elected, after a severe contest, Surgeon to the Middlesex Hospital in 1814, and was admitted as a Member of the London College of Surgeons. In 1824 he was appointed Professor of Anatomy at the Middlesex Hospital, and had overflowing audiences. His practice was large, his reputation as a hospital operator was high, and fortune seemed to be atoning for her former caprices.

In 1809 he had gone to the Haslar Hospital to help to treat the wounded of Corunna, and in his work on surgery he had devoted a chapter to gunshot wounds. So in 1814 he found himself in the fashion, and the Peninsular surgeons, as well as many foreigners, attended his lectures at the hospital. In 1815 came the Hundred Days and the battle of Waterloo; and Charles Bell exclaims to his brother-in-law, John Shaw, who had been with him from a lad, and to whom he was devotedly attached, "Johnnie, how can we let this pass? Here is such an occasion for seeing gunshot wounds. Let us go." And go they did on the 26th of June, reaching Waterloo a few days after the battle.

In his diary he describes what he saw there, and his pen was as graphic as his pencil. Bell seems to have been of great service to the wounded, especially to the French, as they were left totally without assistance.

Some clouds, however, gathered during this most prosperous period of his career. The elder brother Robert died in 1816. John died in circumstances far from affluent in Rome in 1820. These events brought on the brothers who survived many cares. Mr. Wilson, with whom Bell was associated in the Windmill Street establishment, died suddenly in November, 1821, and large as was Bell's income it was all he could do to meet the calls which this calamity threw on him. In the end the museum was purchased by the Edinburgh College of Surgeons in 1824, and in 1827 after the death of his attached friend and brother-in-law, John Shaw, his connection with the school finally ceased. This last event was the greatest grief of his life, and nothing testifies so strongly to the worth of his character and the warmth of his heart as the unbroken affection which subsisted between these two men in relations so close, so confidential, and so constant. John Shaw aided him in all his struggles, and the loss sustained by his death was very grievous, as it threw on Charles Bell more work than his strength allowed.

During all these years he seems, however, to have been busy with research, in spite of all other worries. Between 1821 and 1829 he read a series of papers before the Royal Society describing his investigations on the nervous system. Some of these papers were published in a separate volume in 1824, entitled *Nervous System of the Human Body*. In his republication of *The Nervous System*, pp. 7 and 8, Bell states all the details known before his time. They are practically the same as those he gives in the commencement of *An Idea of a New Anatomy of the Brain*, published in 1811. Briefly they are the following:

The physiology of the nervous system was most confused, narrow, and unsatisfactory, when, as a teacher of anatomy, Bell seriously applied his mind to its elucidation. Its anatomical structure and the relations of its different parts had been carefully investigated. It was well known that the double nerves which are distributed from either side of the spinal cord were enclosed in a single sheath. These double nerves have two distinct roots which are now enclosed in the sheath; and of these roots the posterior has a ganglion and the anterior none. Every anatomist also knew that the nerves pro-

ceeding both from the brain and from the spinal cord were possessed of two functions—one sensory and the other motor. But it never occurred to any of them that separate nerves were needed for these separate functions. When a nerve was divided either accidentally or by a surgical operation, they observed only one invariable result—the part supplied by the severed nerve was deprived both of action and sensation. Instances must have come under their notice, one knows now, in which this double result did not take place, but the unexpected fact escaped their observation, or at least attracted no attention. Alexander Monro (secundus), professor of anatomy in Edinburgh, had discovered that the ganglions of spinal nerves were formed on the posterior roots, whilst the anterior roots passed the ganglions, thus furnishing the starting-point for Charles Bell in his researches. Santorini and Wrisberg furnished him with another point by describing the two roots of the fifth pair of nerves of the brain; and Prochaska and Soemmering unwittingly supplied a third point of guidance by calling attention to the resemblance between the spinal nerves and the fifth pair. These last anatomists seemed on the very verge of the great discovery; because they said, why should the fifth nerve of the brain, after the manner of the nerves of the spine, have an anterior root passing by the ganglion and entering the third division of the nerve? But these men, eminent as they were, failed to unravel the tangled skein. Antonio Scarpa, the greatest anatomist of his day, tried his hand at it and failed. "Is the posterior root," he said, "a proper and peculiar kind of nerve belonging exclusively to the spinal marrow, while the anterior root is a cerebral nerve?" Soemmering, seeing that three nerves went to the tongue, instead of conceiving, as is really the case, that they had three distinct functions, satisfied himself by supposing that several small nerves were equivalent to one large one, and Dr. Munro suggested that two nerves were given to the face, lest by the accidental division of one, the face should be deprived of nervous power altogether. Such were the misty speculations afloat, even in the highest quarters, when Charles Bell began his researches. After much thought and careful consideration of the anatomical details, both in his own dissections and the elaborate plates of Scarpa, the happy idea took shape in his mind of looking to the origin or starting-points of the nerves in order to find out their functions. This was the novel basis, the great initial step, in his splendid career of discovery. He observed the exact resemblance of the spinal nerves throughout their whole course, and was thus led to experiment on them at their roots. After a time he carried on his inquiries into the nerves of the brain, and prosecuted them in a similar manner, by taking their origins as his guide. By thus extending his observations to both these organs, he gained the important advantage of comparing with each other various nerves which differed essentially in the number and structure of their roots, and of elucidating the functions of the one kind by contrast with the others. The basis of his discovery depended on the simple observation that all the spinal nerves had, within the sheath of the spinal marrow, two roots, one from the posterior, another from the anterior portion. In a letter to his brother George (12th March, 1810) he describes the two experiments by which he established their different functions. The results realised his anticipation. He proved that the anterior root was distinct in its function from the posterior. However, his final views were formed by associating those results with others derived from experiments on the brain. He selected two nerves of the brain, the fifth, which has a ganglion, and resembles very much the spinal nerves, and the seventh, which has no ganglion. On cutting across the fifth pair in the face of an ass, the sensibility of the parts to which it was distributed was entirely destroyed; on cutting across the seventh pair the sensibility was not in the least diminished. Further inquiry showed that the fifth nerve, being a ganglionic nerve, was the sole organ of the sensation to the head and the face; and as ganglions were thus shown not to cut off sensation (which was the popular belief of the time), he was confirmed in the opinion that the ganglionic roots of the spinal nerves conferred sensation. He then examined the fifth nerve of the brain more closely, and discovered that it had double roots like those of spinal nerves, an anterior passing by the ganglion, and a posterior passing into or forming the ganglion. Charles Bell conceived that the anterior of the double nerves of men and animals orders the voluntary movements. This opinion he also tested by experiment. As the non-ganglionic portion is distributed to certain muscles of the jaw, if that root of the nerve were divided, these muscles ought to be paralysed. The result was as he expected—the jaw fell. The key was now in his hand, which he used to good purpose. By tracing upwards the anterior columns of the spinal cord from which the motor nerves were seen to emerge, and by looking to their distribution, he was able to establish, both

inferentially and experimentally, the functions of various other nerves. To sum up briefly, Bell had so far discovered that—

- (1) There are two kinds of nerves, sensory and motor.
- (2) The spinal nerves have filaments of both kinds.
- (3) The anterior roots of the spinal nerves are motor.
- (4) The posterior roots of the spinal nerves are sensory.
- (5) The fifth nerve of the brain is both motor and sensory.
- (6) The seventh nerve is the motor nerve of all the muscles of expression in the face.

(7) The tractus motorius was a column extending from the origin of the third cranial nerve to the termination of the spinal cord, and all nerves that branched off from it were motor nerves.

As proving the astuteness and carefulness of Bell's observations, it may be stated that, with the exception of the seventh conclusion, his views are practically identical with those held at the present day.

We know now, by the help of Golgi's method of staining, that there is no anatomical continuity between the upper and lower nerve segments. It is now proved that the upper neuron has its origin in the cells of the cerebral cortex, and that the connection which it has with the lower neuron, which arises in the cells of the anterior horn, is only physiological. But, as far as Bell's conclusions went, they were perfectly correct. But he was not satisfied with these researches. By surveying the nerves of the body generally, and observing the different modes in which they arose from the subdivisions of the brain and spinal cord on the one hand, and the appropriation of particular kinds of nerves to distinct organs on the other, he was led to believe that such peculiarities of origin and distribution had an important significance, that they indicated distinction in the functions of the nerves, additional to those which he had already ascertained. In taking that extended view he arrived at the conclusion that man was supplied by two different sets of nerves—the "original system of nerves," so-called by Bell, which man possessed in common with the rest of the animal kingdom, and the "respiratory system," which had become so specialised as to be peculiar to man and worthy attributes of man's mind. It would not be within the scope of the essay to enquire what relation these discoveries bore to his belief in Creation—whether they were a cause or an effect. We are also fully aware of the difficulty of criticising his works justly, and for that reason we have contented ourselves with but a very brief criticism. We cannot have the least idea under what disadvantages he worked. The anatomy and physiology of the nervous system before his time was a chaos, and Charles Bell was the first to bring any light or order into it. But although he worked under such adverse conditions, as we shall see later on, his conception of the nervous system as a whole was remarkably true, and his theories have stood the test of nearly a hundred years.

We shall now briefly renew his discoveries and theories as regards those two systems of nerves.

1. *Original system of nerves.*—He was particularly struck by the remarkable manner in which the large series of spinal nerves with their analogous nerve of the brain, the fifth, arose from the central organs and passed to their destination. This first class of nerves, to which he applied the term of original system, ministered to organs and bestowed nervous endowments essential to the existence and well-being of creatures of every grade, high and low, in the animal kingdom. He asks the question: given an organised body, dependent for its subsistence on nourishment which it must procure by voluntarily going in quest of it, what organs and properties must it possess to qualify it for that mode of existence?

He concluded that three sets of organs were indispensable to such an existence:

- (a) Organs of locomotion, such as legs or inferior substitutes for them.
- (b) Organs of prehension, such as arms and hands to seize prey, or inferior substitutes for them.
- (c) Organs of mastication—as jaws, armed with teeth or their inferior substitutes.

By means of the spinal nerves the power of motion is given to the upper and lower extremities, the representatives of the organs of prehension and locomotion; and by the small root of the fifth cranial nerve, which is distributed exclusively to the muscles of the jaw, motor power is bestowed on the part which represents the organ of mastication. We must admit that Bell had confined his view to very narrow limits. He might have expanded his field of observation, and include not the individual only, but also the species.

As the result of the same series of experiments, he found out that not only were these nerves the paths along which motor impulses were conveyed, but that by the special nerves common sensation or sense of touch is supplied to all the surfaces of the body (except the

head), and by the large root of the fifth the same property is given to the head, together with the special sense of taste.

He in a sense forestalled the microscopist and opened up the path for him. Bell more than eighty years ago proved the close relationship existing between the spinal nerves and the sensory root of the fifth cranial nerve, but it is only within very recent times that we have found out that the cells of the Gasserian ganglion and the cells of the ganglia on the posterior root of spinal nerves are alike in shape and characters, and probably identical in function.

After an examination of the development of the nervous system in the various species of the animal kingdom, the conclusion which Bell came to was that the series of spinal nerves together with the fifth cranial nerve constituted a class which belonged to all the various species in the animal kingdom; that it ministered two functions and endowments equally necessary to those high and low in the scale; that in animals of the earliest and simplest construction it existed in the rudimentary form of a nervous system, but that by a gradual process of development it attained the perfect condition exhibited in the Vertebrata and in man. Thus in arranging the series together in his classification he called them the original system of nerves.

2. *Respiratory system of nerves.*—Bell shows how by a combination of extensive changes gradually wrought in the structure of animals, from the lowest to the highest, a fit instrument is at length constructed to minister to man's highest endowment—the "mind." The speculations of Bell proved what a true conception he had of life and how correct was his interpretation of facts. It is true that we have to some extent modified our views as to the causes which are at work in the organic world, but the tendency of modern opinion is towards the views enumerated by Sir Charles Bell. The hypothesis regarding the origin of species—blinding in its brilliancy—which was put forward by the great naturalist, Charles Darwin, caused a great revulsion of feeling in favour of natural selection. Signs of a reaction are, however, not lacking now.

Largely on the ground that man alone of all animals is endowed with the faculty of language, Sir Charles Bell concluded that the particular series of nerves which are characterised by being distributed to the organ of respiration, together with the portion of brain from which they arise, has been added in the course of development of animals generally, and a special addition in man, to the pre-existing original system of nerves.

When the nerves included in the two foregoing classes—the "original" and "respiratory"—had their respective places assigned in this arrangement, nearly every nerve throughout the body which arises from the brain and spinal cord had been accounted for. The nerves not comprehended were those of the three organs of sense—smelling, seeing, and hearing,—together with the few nerves of the orbit subservient to the appendages of the eye.

In regard to the nerves of the senses, Bell conceived that the particular sense possessed by each was a special and distinct endowment, and that it was obtained through the connection of the nerve at its root with a part in the interior of the brain introduced to give that sense exclusively. Hence he considered that no one nerve of sense could take upon itself the office of any of the others. For example the nerve of vision—the optic nerve—could not feel by touch any more than a nerve of sensation could perceive variations of light and colour. The optic nerve he thought was limited to discriminating diversities of colours or shades in light; the auditory to distinguishing varieties of sound—and so on, and several interesting illustrations of these views are given in the pages of *The Hand*. Again, he was of opinion that each of the various senses was implanted in the nervous system at a distinct stage in the development of animals generally. The sense of touch and taste he believed, as stated above, to be first conferred, the others he thought were added as the animal rose in the scale and stood in need of more varied sources of perception in regard to the properties of external objects. Entertaining these views he represented the nerves of smelling, seeing, and hearing as supplementary to those of touch and taste constituting a sub-class of the "original" system.

All the nerves embraced in the cerebro-spinal axis having been thus disposed of by Bell in his classification, there remained but one set of nerves, and the general characters of these differed so greatly from the others that there could be no difficulty in classing them apart from the rest. The nerves referred to are the sympathetic system. Bell's view of the sympathetic system seems to have been arrived at by a process of subtraction, as he assumes that it fulfilled offices which had been left unprovided for by the classes of nerves whose functions had been ascertained.

He supposed that it presided over those organic processes in the economy which are common to vegetables and animals, and which

are carried on secretly and independently of the direct control of the brain, such as secretion, absorption, assimilation, growth, reproduction, and decay.

In 1824 he published *An Exposition of the Natural System of the Nerves of the Human Body, with a republication of the papers delivered to the Royal Society on the subject of nerves*, amply illustrated by drawings and narratives of cases both of accident and disease. One really can only get an adequate conception of his researches by perusing this book, and especially that part referring to the eyeball and its appendages, and to the physiology of respiration. The appendix published in 1827 consists mostly of pathological evidence bearing on inquiries into the function of nerves chiefly communicated to him by other men.

Years and sometimes generations pass by before great discoverers are allowed to assume their rightful place in the public estimation. Charles Bell was no exception to this rule. But prejudice and ignorance have now been cleared away, and his name may fairly claim its place beside that of Harvey. Without derogating from the merits of Harvey, the remark has often been made that when one examines the four valves of the heart, and the valves of the larger veins, especially in the lower extremity, it is a wonder that no anatomist before his time had reasoned out the subject to the same result. But the wonder is of another kind when we think of Bell's discoveries. He had no mechanical arrangements to assist him; the nervous system presented to the eye of the anatomist a maze of confused structures apparently inextricable. In discovering the master-key he won for himself a very exalted and almost solitary place among the cultivators of physiological science.

(To be continued.)

Notes.

THE Bart's men at present in Calcutta are anxious that any men going out there from this Hospital should let them know of their arrival. They would like to be able to welcome them to India, and to render such assistance and advice as may be in their power. Such Bart's men are requested to communicate with Surg.-Capt. R. Bird, Resident Surgeon and Officiating Professor of Physiology at the Medical College, Calcutta. We are sure that many will be glad to avail themselves of an invitation indicative of so much *esprit de corps*.

* * *

DR. J. DRYSDALE has been appointed Assistant Demonstrator of Practical Medicine *vice* Dr. H. M. Fletcher.

* * *

MR. W. E. MILES has been re-elected Assistant Demonstrator of Anatomy.

* * *

DR. J. B. CHRISTOPHERSON has been elected Assistant Demonstrator of Anatomy *vice* Mr. J. S. Sloane.

* * *

DR. KENNEDY ORTON has been re-elected Demonstrator of Chemistry.

* * *

MR. W. C. REYNOLDS, of the Royal College of Science, South Kensington, has been elected Assistant Demonstrator of Chemistry.

* * *

MR. C. J. THOMAS has been re-elected Assistant Demonstrator of Biology.

* * *

MR. R. C. ELMSLIE has been elected Assistant Demonstrator of Biology.

THE following Bart.'s men have been appointed by the Home Secretary to act as Medical Referees under the Workmen's Compensation Act:—Mr. Bruce Clarke and Mr. James Berry (Bloomsbury and Whitechapel), Dr. W. G. Vawdrey Lush (Weymouth), Mr. C. Hamilton Whiteford (Stonehouse), Mr. H. Hind (Harrogate), and Mr. W. Balgarnie (Southampton, Winchester, and district).

DR. HORTON-SMITH has been appointed Assistant Physician to the Metropolitan Hospital.

MR. W. T. HOLMES SPICER, F.R.C.S., has been elected Assistant Surgeon to the Royal Ophthalmic Hospital, Moorfields.

THE following is the official arrangement of beds during the closing of the South Wing:

Medical.	Male.	Female.	
Dr. Church	Mary, 22	Faith, 11	
Dr. Gee	Coborn, 20	Hope, 11	
Sir D. Duckworth	John, 21	Faith, 11	
Dr. Hensley	Colston, 24	Hope, 11	
Dr. Brunton	Rahere 24	Charity, 11	
Dr. Champneys		Charity, 11	
Surgical.	Male.	Female.	
Mr. Willett	Pitcairn, 26	Harley, 13	
	Paquet, 2	Paquet, 3	
Mr. Langton	Henry, 26	Lucas, 13	
	Paquet, 2	Paquet, 3	
Mr. Marsh	Darker, 25	Abernethy, 18	
Mr. Butlin	Sitwell, 25	Lucas, 13	
	Paquet, 3	Paquet, 3	
Mr. Walsham	Kenton, 26	Harley, 13	
	Paquet, 2	Paquet, 2	
Mr. Cumberbatch	Paquet, 2	Abernethy, 2	

WE UNDERSTAND that Dr. West is willing to take a Vacation Class in Clinical Medicine for old St. Bartholomew's men during the months of August and first half of September. The Classes, we hear, will be taken in the wards once a week at times to be subsequently arranged, and it would be well for anyone who desires to attend to communicate with Dr. West direct.

THE Luke Armstrong Scholarship in Comparative Pathology has been awarded by the University of Durham to Mr. P. E. Turner, M.B., B.S.

THE DEGREE of M.D. of the University of Cambridge has been conferred upon H. K. Anderson, J. J. Taylor, E. H. Douty, and J. B. Christopherson.

THE DEGREE of M.B. of the University of Cambridge has been conferred upon J. E. Sandilands and Hon. G. H. Scott. Mr. Sandilands has also taken the B.C. degree.

THE Seventh Decennial Contemporary Club held a very successful dinner at Frascati's, on Wednesday, July 6th.

Dr. John Mason, of Windermere, took the Chair, and ninety members were present. Dr. Mason, after proposing the health of the Club, presented Mr. Bowlby with the wedding gift subscribed by the members; it consisted of five silver baskets for table decoration.

DR. W. H. MAIDLOW has been appointed captain of the Ilminster Cricket Club, which is having a good season. The club has played eight matches, of which they have won seven and lost one.

THE current number of the *Amateur Photographer* contains an article by Mr. E. C. Fincham, on the cinematograph as applied to medicine, in which it is pointed out that this instrument, so far from being merely a toy, may prove of great scientific value.

Amalgamated Clubs.

CRICKET CLUB.

ST. BART.'S v. GUY'S.

This match was played at Chiswick Park on June 17th, and resulted in an easy win for Bart.'s. Guy's won the toss, and batted first on a fast and true wicket. Their batting was very consistent throughout, the best innings being that of Humphrey, whose innings of 30 included some fine drives to the off. Brydon at one time looked dangerous, but was well taken by Brunner in the country. Their innings closed for 186.

Our start was disastrous, Randolph being caught in the slips off Clarke's first delivery. Greaves came in, and after making a very hard drive off Clarke, and another off Wiltshire, settled down to good sound cricket. At 34 Nunn was bowled by Wiltshire for a good 21; Brunner followed, but at 40 was bowled for a single. With Willett's arrival matters improved, and, despite bowling changes, 117 were added before Greaves was bowled while trying to drive Clarke. His 89 was made in his best style, and without a chance. Willett did not stay much longer, retiring with a capital 40 to his credit. With Bigg and Talbot in the score rose steadily, until 180 was reached, when Talbot was caught off M. C. Wetherell. Rose joined Bigg, and the Guy's total was passed. The bowling now became very loose, and runs came fast. Bigg was playing very attractive cricket. Wickets continued to fall at intervals until Pank came in for the last wicket. A long stand followed, 82 runs being added before the last-named batsman was bowled for a hard-hit 40. Bigg carried out his bat for 82, his innings being very praiseworthy.

SCORES.

GUY'S.		ST. BART.'S.	
A. E. Clarke, b Rose	10	J. W. Nunn, b Wiltshire.....	21
F. E. Wetherell, c Boyle, b Rose ..	9	W. H. Randolph, c M. C. Wetherell, b Clarke	0
K. V. Trubshaw, b Pank	13	H. S. Greaves, b Clarke	89
J. M. Brydon, c Brunner, b Pank	23	F. E. Brunner, b Wiltshire ..	1
K. B. Alexander, c Nunn, b Greaves	25	J. A. Willett, b M. C. Wetherell	40
M. C. Wetherell, c Boyle, b b Greaves	26	E. Talbot, c Wiltshire, b M. C. Wetherell	15
L. Humphrey, b Bigg	30	L. B. Bigg, not out	82
H. Durbridge, c Turner, b Pank	3	E. F. Rose, c and b Clarke ..	6
G. T. Willan, b Pank	26	C. H. Turner, b Trubshaw ..	8
A. E. Causton, c Willett, b Rose	7	H. E. Boyle, c Wiltshire ..	13
H. P. Wiltshire, not out	10	H. W. Pank, c Clarke, b Trubshaw	40
Extras.....	5	Extras.....	15
Total	186	Total	330

BOWLING ANALYSIS.

	Overs.	Maidens.	Runs.	Wickets.
Rose	20	5	57	3
Pank	27	1	6	58
Greaves	16	3	3	40
Willett	3	1	8	0
Bigg	2	0	18	1

BART'S v. HAMPSTEAD.

This match was played at Hampstead on June 18th, and resulted in an easy win for our opponents, who were strongly represented. We were unfortunate in losing the toss, as Hampstead took full advantage of first innings. W. R. Moon was top scorer for them with a good 53. The innings closed for 205. Bart's showed up but poorly against this total; Greaves and Sale were the only two to reach double figures, Greaves' 29 being a good innings. Finally we were all out for the small total of 73. Following on we fared only a little better, losing 7 wickets for 86.

SCORES.

HAMPSTEAD.

L. J. Moon, b Rose	20
J. G. Q. Besch, c Boyle, b Rose	0
H. K. Hebert, c Rose, b Greaves	1
W. S. Hale, b Rose	27
I. M. Farniloe, b Willett	32
W. R. Moon, b Willett	53
A. R. Trimen, b Pank	21
W. W. A. Deane, c Willett, b Pank	6
F. R. Spofforth, b Pank	7
E. L. Marsden, b Pank	29
S. S. Pawling, not out	7
Extras	2
Total	205

ST. BART'S.

1st Innings.	2nd Innings.
H. Buck, b Spofforth	4
J. C. Sale, b Hale	11
H. S. Greaves, b Marsden	29
F. E. Brunner, b Hale	6
J. A. Willett, b Marsden	3
L. F. Rose, c Moon, b Spofforth	4
H. E. Scoones, lbw, b Spofforth	0
H. W. Pank, c Trimen, b Spofforth	9
C. H. Turner, b Spofforth	4
H. E. Boyle, not out	0
C. F. Nicholas, b Spofforth	0
Extras	3
Total	73
	Total (for 7 wks.) 86

BOWLING ANALYSIS.

	Overs.	Maidens.	Runs.	Wickets.
Rose	19	2	57	3
Pank	17	2	73	4
Greaves	8	1	26	1
Turner	4	1	17	0
Willett	10	1	32	2

Rose bowled 1 wide.

ST. BART'S v. THE WANDERERS.

This match was played at Winchmore Hill, on Saturday, July 2nd, and ended in a victory for the hospital by 43 runs. The Wanderers won the toss, but preferred to put us in on a sticky wicket. We started very disastrously, 5 wickets falling for 29 runs. Willett and Scoones then made an invaluable stand for the sixth wicket. Both played excellent cricket, Scoones making 32, while Willett was out for a splendid innings of 52. When the Wanderers went in they found runs very hard to get, both the bowling and fielding of the hospital team being good. When the last wicket fell they were 43 runs behind our score, Coleman being not out with 25 to his credit. Rose bowled excellently, taking 5 wickets for 46; while Willett took 3 for 20. Scoones brought off three catches, that which dismissed Pretty being an especially brilliant effort.

SCORES.

ST. BART'S

1st Innings.	2nd Innings.
E. F. Rose, b Birch	0
W. H. Randolph, b Birch	1
H. S. Greaves, c Colman, b Bull	18
L. B. Bigg, b Bull	4
L. Talbot, c Berridge, b Birch	4
J. H. Willett, b Pretty	52
H. E. Scoones, c Leave, b Bicknell	32
H. J. Pickering, b Bull	14
C. H. Turner, b Leave	4
H. E. Boyle, c Moggeridge, b Bicknell	3
H. E. Stanger-Leathes, not out	3
Extras	6
Total	141
	Totals

WANDERERS.

H. C. Pretty, c Scoones, b Rose	16
E. H. S. Berridge, b Stanger-Leathes	5
R. B. Brookes, b Rose	17
G. S. Bicknell, c Scoones, b Rose	3
S. Colman, not out	25
C. F. Moggeridge, c Talbot, b Willett	7
H. T. Bull, b Willett	0
H. H. Behrend, c Scoones, b Willett	4
J. Faulkner, b Rose	0
F. H. Birch, run out	1
A. B. Leave, c Randolph, b Rose	7
Extras	13
Total	98

Rose	took 5 wickets for 47.
Stanger-Leathes	1
Willett	3

LAWN TENNIS CLUB.

ST. BART'S v. HORNSEY L.T.C.

Played at Hornsey on May 18th, and won by Bart's by 7 matches to 2, 15 sets to 5, and 109 games to 78.

J. Stirling-Hamilton and L. Orton—

beat E. E. Adamson and A. C. Eldridge, 6-2, 6-1.
beat J. S. Puckle and C. S. Robbins, 6-2, 6-2.
beat J. H. Nickolls and E. W. Sloper, 6-2, 6-4.

C. H. Barnes and S. Hey—

lost to Adamson and Eldridge, 3-6, 4-6.
lost to Puckle and Robbins, 6-3, 2-6, 3-6.
beat Nickolls and Sloper, 9-7, 6-4.

G. V. Bull and C. Pennefather—

beat Adamson and Eldridge, 6-4, 6-3.
beat Puckle and Robbins, 6-3, 3-6, 7-5.
beat Nickolls and Sloper, 6-3, 6-3.

The matches on May 19th and 21st against Winchmore Hill L.T.C. and Wanstead L.T.C. were scratched owing to rain.

ST. BART'S v. SOUTHGATE L.T.C.

Played at Winchmore Hill on May 28th. St. Bart's lost by 9 matches to 0, 18 sets to 3, and 121 games to 58.

J. Stirling-Hamilton and L. Orton—

lost to C. B. Weir and F. C. Burry, 6-1, 2-6, 4-6.
lost to A. H. Green and Simpson, 3-6, 3-6.
scratched to A. R. Cowan and C. Barker (retired).

J. Valerie and W. H. Crossley—

lost to Weir and Burry, 4-6, 4-6.
lost to Green and Simpson, 3-6, 3-6.
lost to Cowan and Barker, 3-6, 3-6.

G. V. Bull and H. T. George—

lost to Weir and Burry, 1-6, 1-6.
lost to Green and Simpson, 1-6, 6-4, 4-6.
lost to Cowan and Barker, 1-6, 2-6.

ST. BART'S v. COOPER'S HILL L.T.C.

Played at Cooper's Hill on June 1st. St. Bart's lost by 3 matches to 6, 7 sets to 14, and 82 games to 116.

- V. S. A. Bell and T. K. N. Marsh—
lost to V. T. Janson and A. C. Crawley-Bolvey, 2-6, 3-6.
beat H. H. Foll and Moser, 7-9, 6-3, 10-8.
beat Hicks and Brancher, 6-4, 12-10.
- J. Stirling-Hamilton and L. Orton—
lost to Janson and Crawley-Bolvey, 2-6, 2-6.
lost to Foll and Moser, 4-6, 7-5, 3-6.
beat Hicks and Brancher, 6-2, 6-4.
- S. Hey and F. A. Rose—
lost to Janson and Crawley-Bolvey, 0-6, 1-6.
lost to Foll and Moser, 2-6, 1-6.
lost to Hicks and Brancher, 2-6, 0-6.

ST. BART'S v. CONNAUGHT L.T.C.

Played at Chingford on Saturday, June 4th. St. Bart's won by 7 matches to 2, 14 sets to 5, and 106 games to 77.

- V. S. A. Bell and J. Stirling-Hamilton—
beat H. G. Ridgers and S. W. Newling, 6-4, 6-2.
lost to B. Collins and C. Winterton, 3-6, 3-6.
beat E. C. Walbourn and R. A. B. Reynolds, 6-0, 3-6, 6-1.
- L. Orton and C. Pennefather—
beat Ridgers and Newling, 6-1, 6-4.
beat Collins and Winterton, 6-0, 6-4.
beat Walbourn and Reynolds, 6-4, 6-2.
- C. H. Barnes and S. Hey—
beat Ridgers and Newling, 6-4, 6-4.
lost to Collins and Winterton, 9-11, 3-6.
beat Walbourn and Reynolds, 6-4, 7-5.

ST. BART'S v. CONNAUGHT L.T.C.

Played at Chingford on Tuesday, June 7th. St. Bart's lost by 4 matches to 5, 10 sets all, and 112 games to 103.

- V. S. A. Bell and C. Pennefather—
lost to C. Winterton and B. Collins, 4-6, 6-2, 5-7.
lost to Ide and E. C. Walbourn, 5-7, 8-8 (unfinished).
beat H. Cruickshank and J. S. Puckle, 6-4, 6-2.
- J. Stirling-Hamilton and J. Valerie—
lost to Winterton and Collins, 3-6, 6-3, 5-7.
beat Ide and Walbourn, 6-4, 6-3.
beat Cruickshank and Puckle, 6-0, 4-6, 8-6.
- C. H. Barnes and C. G. Watson—
lost to Winterton and Collins, 4-6, 4-6.
lost to Ide and Walbourn, 4-6, 6-8.
beat Cruickshank and Puckle, 6-3, 6-3.

ST. BART'S v. CLARENCE L.T.C.

Played at Brixton on Saturday, June 11th. St. Bart's lost by 4 matches to 5, 11 sets to 10, and 96 games to 84.

- Doubles.—V. S. A. Bell and J. K. N. Marsh—
lost to H. and J. Martin, 4-6, 5-7.
beat J. and F. Martin, 6-2, 6-2.
- C. Pennefather and J. Valerie—
lost to Scott and J. Martin, 6-2, 2-6, 2-6.
- S. Hey and G. V. Bull—
beat Green and Philpot, 6-4, 6-4.
- Singles.—V. S. A. Bell lost to J. Martin, 3-6, 2-6.
C. Pennefather beat Scott, 6-3, 6-2.
S. Hey beat Philpot, 6-4, 6-1.
J. Valerie lost to H. Martin, 3-6, 6-1, 2-6.
G. V. Bull lost to Green, 4-6, 6-0, 3-6.

ST. BART'S v. HORNSEY L.T.C.

Played at Winchmore Hill on Wednesday, June 15th. St. Bart's won by 7 matches to 2, 14 sets to 4, and 96 games to 62.

- J. Stirling-Hamilton and C. Pennefather—
beat G. Lewis and H. Nicholls, 6-2, 6-4.
beat A. Eldridge and J. S. Puckle, 6-4, 6-2.
beat W. Duval and Robinson, 6-3, 6-1.
- J. K. N. Marsh and H. Marrett—
lost to Lewis and Nicholls, 5-7, 3-6.
beat Eldridge and Puckle, 7-5, 6-2.
beat Duval and Robinson, 6-4, 6-3.
- C. H. Barnes and S. Hey—
lost to Lewis and Nicholls, 0-6, 2-6.
beat Eldridge and Puckle, 6-2, 7-5.
beat Duval and Robinson, 6-0, 6-0.

SHOOTING.

U.H.R.A. v. ARTISTS R.V.

June 20th, at Runemede.

	U.H.R.A.							
	200 yds.		500 yds.		600 yds.		Totals.	
C. de Z. Marshall (St. Thos.)	33	...	32	...	33	...	98	
A. C. Brown (St. Bart's)	26	...	32	...	27	...	85	
C. R. Brown (St. Bart's)	30	...	28	...	27	...	85	
A. Pearson (Guy's)	31	...	30	...	24	...	85	
A. de Morgan (St. Mary's)	29	...	26	...	26	...	81	
H. C. Jones (St. Mary's)	25	...	31	...	24	...	80	
J. A. Glover (Guy's)	30	...	27	...	23	...	80	
H. R. Beale (St. Thos.)	26	...	27	...	20	...	73	
Total	667							

ARTISTS R.V.

Sergeant-Instructor Stirling	29	...	32	...	31	...	92
Sergeant Sharps	31	...	32	...	29	...	92
Private Keeson	33	...	31	...	27	...	91
Private Gillman	29	...	31	...	29	...	89
Private Townsend	29	...	31	...	28	...	88
Lieutenant Armitage	26	...	31	...	30	...	87
Lieutenant Edlmann	29	...	28	...	30	...	87
Colonel Underwood	30	...	29	...	27	...	86
Total							712

Result:—Lost by 45 points.

U.H.R.A. v. COOPER'S HILL R.I.E.C.

June 23rd, at Runemede.

	U.H.R.A.							
	200 yds.		500 yds.		600 yds.		Totals.	
C. de Z. Marshall (St. Thos.)	33	...	33	...	24	...	90	
W. R. Read (St. Bart's)	30	...	27	...	32	...	89	
N. Carpmal (St. Thos.)	29	...	31	...	27	...	85	
A. C. Brown (St. Bart's)	27	...	27	...	25	...	79	
H. C. Jones (St. Mary's)	26	...	24	...	28	...	78	
H. de Morgan (St. Mary's)	31	...	27	...	15	...	73	
C. R. Brown (St. Bart's)	27	...	22	...	22	...	71	
H. Upcott (St. Thos.)	24	...	25	...	17	...	66	
Total	631							

R.I.E.C.

Captain Shields.....	28	...	26	...	26	...	80
J. K. North.....	27	...	31	...	18	...	76
A. G. Heming	26	...	29	...	20	...	75
E. Lambson	23	...	23	...	27	...	73
R. H. Duke	21	...	27	...	20	...	68
J. C. Wood.....	26	...	19	...	22	...	67
A. C. Crawley Boeng	30	...	16	...	15	...	61
A. F. Bayley	27	...	15	...	12	...	54

Result:—Won by 77 points.

SWIMMING.

WATER-POLO MATCHES.

St. Bart's v. Cambridge University.—This match was played on May 14th at the Fitzroy Bath. This being the first match of the season the team did not combine well together, the shooting of the forwards being particularly weak; consequently the game resulted in a win to Cambridge by 4 goals to *nil*. In the team race which preceded the game, Cambridge won by about eight yards. The team was afterwards entertained at dinner.

Team: H. E. Thomas (goal); M. B. Scott, M. G. Winder (backs); A. H. Bloxsome (half-back); A. M. Amsler (captain), E. M. Niall, F. E. Tayler (forwards).

The return match was played at Cambridge on May 30th, and resulted in a win for Cambridge by 5 goals to 1 the same team representing the Hospital as on the former occasion.

After the game the team were entertained at dinner, when the toast

of "Prosperity to the Hospital Club" was ably proposed by the Cambridge captain, H. W. Masterman, and suitably responded to by our captain, A. M. Amsler.

St. Bart's v. Richmond Swimming Club.—Played at Fitzroy Baths May 18th, and resulted in a win for the visitors by 5 goals to 1. Richmond's superiority in front of the goal was particularly marked.

Prior to the polo game a team race of four a side took place, our four being E. M. Niall, M. B. Scott, A. H. Bloxsome, H. G. Thomas. It resulted in a splendid struggle; H. G. Thomas recovered a good deal of lost ground, but just failed to get home by a yard.

Team: H. G. Thomas (goal); M. G. Winder and M. B. Scott (backs); A. H. Bloxsome (half-back); A. M. Amsler, E. M. Niall, F. E. Tayler (forwards).

St. Bart's v. London Scottish V.R.S.C.—Played at the St. George's Baths on May 27th. Play was of an even character throughout the game; the Scottish scored just before call of time, and thus won by 1 goal to love.

Team: C. Dix (goal); M. G. Winder, E. M. Niall (backs); A. H. Bloxsome (half-back); A. M. Amsler, M. B. Scott, F. E. Tayler (forwards).

St. Bart's v. Otter S.C.—Played at St. George's Baths on June 14th, Otters winning by 4 goals to nil. Our forwards were particularly weak in front of goal, and did not shoot well; hence the result. H. G. Thomas played a fine game in goal.

Team: H. G. Thomas (goal); M. B. Scott and M. G. Winder (backs); A. H. Bloxsome (half-back); A. M. Amsler, E. M. Niall, and F. E. Tayler (forwards).

St. Bart's v. Richmond S.C.—Played at Richmond June 27th, resulting in a win for the home team by 2 goals to 1, after a fast game. H. G. Thomas was again conspicuous for his play in goal.

Team: H. G. Thomas (goal); M. G. Winder, M. B. Scott (backs); A. H. Bloxsome (half-back); A. M. Amsler, H. E. Masterman, F. E. Tayler (forwards).

St. Bart's v. Queen's Westminster V.R.S.C.—Played at Westminster Baths on June 29th. Resulted in an easy win for the Hospital by 5 goals to 1, the goals being scored by H. E. Masterman (3), F. E. Tayler, and E. M. Niall.

Team: H. G. Thomas (goal); E. M. Niall, M. B. Scott (backs); A. H. Bloxsome (half-back); A. M. Amsler, H. E. Masterman, F. E. Tayler (forwards).

Previous to the game a team race of four a side was swum, E. M. Niall, M. B. Scott, A. H. Bloxsome, and H. E. Thomas representing the Hospital. It was a close one throughout; the home team gained on the second length and kept the advantage to the end, winning by about half a yard.

SWIMMING RACES.

The following are the results of the Club races:

Ten lengths (300 yards) Captaincy Race.—Four swum. H. G. Thomas won easily by 20 yards; A. H. Bloxsome being second.

Two lengths scratch.—H. G. Thomas, 1; M. B. Scott, 2.

Four lengths Handicap.—M. B. Scott, 1; A. M. Amsler, 2.

INTER-HOSPITAL WATER-POLO CUP.

The following is the draw:

St. Mary's v. Guy's A.
St. Thomas's v. Middlesex B.
London v. University C.
St. Bart's—bye.

To be played not later than July 11th.

Winner of A v. winner of C.

Winner of B v. St. Bart's.

Not later than July 18th.

Final to be played at Bath Club, July 25th or 26th.

INTER-HOSPITAL TEAM RACING SHIELD.

A St. Mary's v. Westminster. To be played before July 11th.

Guy's v. Bart's. London—a bye.

B London v. winner of A.

C Guy's v. Bart's.

To be played before July 19th.

Winner of B v. winner of C. To be played before July 26th.

ATHLETIC CLUB.

THE 19th Annual Meeting of this Club was held on June 23rd at Stamford Bridge.

The weather was fine; but, as a stiff breeze was blowing, the times were hardly up to the average.

The attendance was fair, but not what one might expect from the Hospital, which can boast of having won the Inter-Hospital Sports Shield more often than any other hospital. The Senior Staff was well represented.

Mason again distinguished himself by winning the Quarter-mile Challenge Cup for the fourth year in succession, and also by running a dead-heat in the Hundred Yards Scratch with W. M. Fletcher, whom we are heartily glad to welcome as a member of the Hospital. We are sorry to hear that this is the last year that Mason will be eligible to represent the Hospital, and we can only offer him our sincerest thanks for the energy and devotion he has displayed for the welfare of the Club.

Amongst the new members we must congratulate Fletcher on his performance in the Hurdle Race, which he won with ease in spite of his heavy handicap of 30 yds.; while Bates in the Half-mile, and Lister with the "Weight," gave us great hopes for the future.

The Junior Staff race was well patronised, and we hope this event will be a permanent one.

Our President, Dr. W. S. A. Griffith, gave proof of the interest he takes in the Club by the present of a handsome Challenge Cup for the 220 Yards, together with a prize for the 120 Yards.

At the end of the afternoon the prizes were distributed by Mrs. Griffith, for whom three hearty cheers were raised for the kindly interest she showed in the proceedings of the afternoon.

EVENTS.

100 Yards Level.—An excellent race, and well fought to the end, resulting in a dead-heat between W. M. Fletcher and S. Mason Time, 10½ secs.

Half-mile.—A. L. Vaughan, 20 yds. start, 1; T. Bates, 40 yds., 2; W. V. Wood, scr. 3. Seven ran. Bates led until eighty yards from home, when he was passed by Vaughan, who won by ten yards.

120 Yards.—A. Hay, scr., 1; S. Mason, 1 yd. start, 2. There was a good field, but Hay and Mason had the race between them, the former winning a close race.

Putting the Weight.—H. E. Boyle, receives 6 ft., 29 ft. 11½ in., 1; A. E. T. Lister, receives 5 ft. 2 in., 2. In this event eight competed. The handicaps proved too much for the scratch men.

Fresher's 220 Yards Scratch.—T. Bates, 1; H. E. Thomas, 2. The winner, running strong from the beginning, won easily.

Throwing the Hammer.—G. M. Levick, receives 60 ft., 1; T. M. Body, receives 50 ft., 2. In this event again the scratch men had too hard a task set them.

One Mile Handicap.—A. L. Vaughan, 10 yds. start, 1; A. M. Amsler, 80 yds., 2. Vaughan went off from the start, and by the beginning of the last quarter had the race well in hand, and won easily.

120 Yards (Junior Staff).—A. B. Tucker, 10 yds. start, 1; S. F. Smith, scr., 2. This produced a good race, Smith just losing the event to Tucker.

Half-mile Handicap (Strangers).—W. A. McEnery, Midx. Hosp. and L.A.C., 40 yds. start, 1. McEnery won easily in 1 min. 59½ sec.

High Jump.—H. B. Butler, scr., 1; T. M. Body, 4 in. start, 2. This event produced a small field, Butler proving himself winner with a jump of 5 ft. 1 in.

Hurdle Race.—W. M. Fletcher, owes 30 yds., 1; A. E. Thomas, owes 8 yds., 2. Fletcher had caught his field at the half distance, and hurdling in splendid form, won easily.

Quarter-mile Scratch.—S. Mason (holder), 1; E. Wethered, 2. The issue was never in doubt, Mason going ahead from the start and winning by forty yards.

Long Jump.—A. Hay, receives 6 in., 1; B. C. Green, scr., 2. This event was well patronised, but the veterans proved themselves equal to the occasion.

Amalgamated Clubs.

BALANCE-SHEET, 1896-7.

Cr.	£	s.	d.	Dr.	£	s.	d.	£	s.	d.
By Members' Subscriptions	587	9	6	To Grants to Clubs :						
" Grant from Medical School	100	0	0	Rugby Football Club	15	13	3			
" Profit on the JOURNAL	19	3	4	Association Football Club	12	5	6			
				Boxing Club	19	4	2			
				Shooting Club	4	8	6			
				Swimming Club	17	0	6			
				Lawn Tennis Club	13	18	11			
				Hockey Club	2	13	1			
				Cricket Club	18	7	6			
				Athletic Club	36	2	3			
								139	13	8
				To Abernethian Society, 86 members at £1 1s.				90	6	0
				" Musical Society				20	0	0
				Balance to Maintenance and Reserve Fund				456	13	2
								£706	12	10

Audited and found correct according to
vouchers and bank pass book.

PERCY FURNIVALL.
H. MORLEY FLETCHER.
H. M. CRUDDAS.

£706 12 10

£706 12 10

MAINTENANCE AND RESERVE FUND, 1896-7.

Cr.	£	s.	d.	Dr.	£	s.	d.
By Balance from 1895-6	200	15	10	To Stamps for cheques and commission			0 8 11
" Funds from General Account	456	13	2	" Subscription to Hare and Hounds			3 3 0
" Sale of Refreshments	5	12	2	" Special Grants to Clubs—Tennis	3	10	3
				Swimming	2	0	0
							5 10 3
				" Towels, lamp chimneys, &c.			3 9 0
				" Hockey posts			2 10 0
				" Rent			300 0 0
				" Rates, taxes, and water			41 5 3
				" Wages of clerk (two years)			10 0 0
				" Wages of ground man, boys, coals, keep of horse, and general maintenance of ground			132 19 3
				" Refreshments, luncheons, &c.			8 7 1
				" Secretary's petty cash			10 12 2
				Balance at bank			144 16 3
							£663 1 2

Audited and found correct according to
vouchers and bank pass book.

H. MORLEY FLETCHER.
PERCY FURNIVALL.
H. M. CRUDDAS.

£663 1 2

£663 1 2

Abernethian Society.

THE Mid-Sessional Meeting of the above Society was held on Thursday evening, July 7th, in the Anatomical Theatre, when Mr. T. J. Horder, President, occupied the chair. There was a good attendance both of members and of the nursing staff. After a few preliminary remarks, the chairman called upon Professor Kanthack to deliver his address on "The Art and Science of Medicine." A full report of the latter will be found in the next issue of the JOURNAL, to which the reader is referred.

Professor Kanthack, who was received with loud applause, proceeded to read his address, consisting briefly of an appeal for a more scientific and experimental system in the study of medicine as a whole. Clinical pathology and research work in the wards were to be carefully cultivated in order to maintain the subject of medicine as a science rather than as an empirical art.

On its conclusion the chairman said that it had been suggested that the Mid-Sessional Address in the summer term should not be given in future, but had that been

adopted they would have been deprived that evening of an admirable address.

Mr. Berry then rose, and was greeted with much applause. It was a peculiar pleasure to him, he said, to propose a vote of thanks to Professor Kanthack, firstly because some fifteen years ago he had held office in the Abernethian Society, and secondly because he welcomed his old colleague back again, of whose skill and kindness he had so often availed himself. He was sorry to have to agree with Professor Kanthack that we were behind our fellow-workers in the Continental schools of medicine, but at any rate he thought we were more humane than they. For instance, we at least had men whose sole duty it was to administer anæsthetics, whereas abroad this department was more or less left to chance. He had even seen chloroform given by a hospital porter.

Dr. Garrod seconded the vote of thanks, remarking that the most cordial one would be that Professor Kanthack's advice should bear fruit.

After a short reply by Professor Kanthack the meeting came to an end, and refreshments were partaken of in the library.

Eighth Decennial Contemporary Club Dinner.

THE annual dinner of this club was held at the Café Royal on Wednesday, June 29th, at 7.30, Dr. Hayward in the chair. There were only 30 members present, although considerably more than that number had stated their intention of being present. People who say they are coming and do not do so, only add another tax to the club. After the usual loyal toasts Dr. Hayward rose to propose the health of the club. He explained that he was really the most junior member, for the answer to his application to join the club took the form of a request to take the chair on this occasion. This club had the future before it, but unlike the second Mrs. Tanqueray, it had no past. So far as its brief history went, how did this decennial compare with its predecessors? Most favourably, for we could point to successes in every direction. Gold medallists were so numerous that we might almost be called a club of mono-metallists. An American had once laid down this rule for after-dinner speeches—if you don't strike oil in five minutes stop boring; and Dr. Hayward said he intended to act on this advice.

Mr. Lillie played a pianoforte solo; Mr. Douglas sang "My Love's an Arbutus," and Mr. S. F. Smith sang "A May Morning."

Dr. W. J. Horne proposed the toast of the Chairman, saying that it was a particular pleasure to him to do so, as he had been so closely associated in the same departments of hospital work as Dr. Hayward. The chairman responded in brief and suitable terms. Mr. S. F. Smith sang "I'll sing thee songs of Araby," and Dr. L. C. Thorne Thorne gave a recitation.

Mr. Langdon Brown proposed the health of the Secretaries. He said that it had been well remarked that no man was secure at a dinner without a speech written out in his waistcoat pocket. He had been feeling at peace with all the world when it was cunningly instilled into his ear that he had to make a speech. So that he had no time for those carefully prepared impromptus appropriate to such an occasion. But what a theme, Prof. Kanthack and Mr. Waring! This club was probably unique in possessing as its secretaries two Jacksonian essayists. He referred to their many services and achievements, and asked the club to drink their health with acclamation, which was accordingly done.

Mr. Douglas sang "Brother Ambrose;" and then Professor Kanthack replied. He said it was often his lot to be thanked for things he had not done. Mr. Waring was really responsible for the arrangements of this most enjoyable dinner. The club was suffering from that curable disease of youth, and had not yet reached the stage of senile degeneration. Bart's and this club were to the fore wherever he had been, and wherever we looked.

Mr. Waring reported that the membership last year was 260, and this year had reached 319, so that this bid fair to be the most successful decennial club in time, a distinction which at present rested with the seventh decennial. Turning to the men who had gone abroad, Mr. Waring said he was pleased to hear there was to be a Bart's dinner in India this year; the club was glad to see in its midst that night Mr. Masina, demonstrator of surgery at Bombay, who had recently obtained his F.R.C.S. At his suggestion the health of the Indian Bart's men was drunk, and the Chairman forwarded them a telegram to that effect.

Mr. S. F. Smith sang Schubert's "Serenade." Mr. Masina, in responding, said that he had found Bart's surgical teaching second to none in England, and for the matter of that second to none in the world. Students of tropical diseases owed a debt of gratitude to Prof. Kanthack for his researches on leprosy and Madura foot. He thanked the club most heartily for associating his name with this toast.

The proceedings then closed with an enthusiastic rendering of "Auld Lang Syne."

The Summer Concert.

THE Summer Concert given by the Junior Staff and the Musical Society took place in the Great Hall on Friday, July 8th. On all hands it was pronounced a great success. The programme was shorter than usual, and could therefore be taken at a more leisurely pace, in itself a decided advantage. The items were less classical than last year. Was it on this account that they were more appreciated? Lighter elements

were supplied by Mr. Adams's banjo solo and Mr. Valerie's "coon" songs.

The proceedings started shortly after eight o'clock with Rheinberger's quartet "Allegro Molto," known to all musicians. This was well rendered by Messrs. Pollard and Knobel, with Drs. Tebb and Womack.

Mr. P. Wood is an old favourite at Bart's concerts. He was in excellent voice in "The sea hath its pearls." As an encore he gave one of Meyer Helmund's songs. Mr. Adams's banjo solo by Cammeyer (distinctly the best composer for this instrument) was well received. Two vocal trios by Nurse Ball, Nurse Buckingham, and Nurse Pearce formed a new and acceptable feature. Dr. West sang "Damon," and in response to an enthusiastic encore gave "Mary"—a song which he gave at this concert two years ago. He sang it even better than on that occasion, to say which is in itself very high praise. The Choral Society deserves much commendation for its rendering of the glees which concluded the first portion of the programme. Every word could be clearly heard. The "Widow Bird," by Charles Wood, was quite out of the ordinary; there is always something original to be found in the works of this composer. To pathos succeeded Barnby's cheerful ditty, "While youthful sports."

And then the interval. The Summer Concert is usually fortunate in its weather, and this year proved no exception. To those unequal to the fierce struggle for refreshments which took place in the Library, the Square proved a quiet refuge. We were sorry to note that the more rigid system for distributing refreshments which has been in vogue the last two years was on this occasion given up for the old haphazard plan.

The second part began with Schumann's quartet "Andante"—the only quartet he ever wrote, and equally famous with his Quintet performed last year. Nurse Ball sang "Nymphs and Shepherds" in her usual admirable style, and received an undeniable encore. It is sad to think that this is Nurse Ball's last appearance at these concerts; she has indeed been one of the mainstays of the Musical Society.

Mr. Valerie's "coon" song, with two men humming an obligato, was quite one of the hits of the evening. His fine voice was much appreciated in this, as in the encore song, also of the "coon" order.

Dr. Womack then played a violoncello solo with great taste. Mr. S. F. Smith has seldom been heard to such advantage as in Hatton's "Come live with me," and we congratulate him on a really admirable performance. He gave as an encore a song by Jensen, which was also excellently rendered.

The Choral Society's glee, "Jack and Jill," went with a good swing, and the performance closed with the traditional Junior Staff chorus. "Sound the pibroch" was the one chosen this year. The unintelligible Gaelic refrain was carefully translated at the foot of the programme as "It comes upon me to arise," presumably a reference to arduous night duties of the Resident Staff. Be that as it may, the chorus was much appreciated and an encore demanded. Equal to this as to other emergencies, they gave an old English ditty, "Twankydllo," which went even better. And then with an abbreviated version of "God Save the Queen," a successful evening came to a close.

Our thanks are due to Mr. Pollard and to the Junior Staff Secretaries for the concert, Mr. S. F. Smith and Mr. R. de S. Stawell for the excellent arrangements for the evening's enjoyment.

Review.

INFLAMMATION OF THE BLADDER, by C. W. MANSELL MOULLIN, M.D.(Oxon.), F.R.C.S. (London: H. K. Lewis, 5s.)

In this volume Mr. Mansell Moullin's aim has been to show that inflammation of the bladder in the great majority of cases depends upon septic infection, and that the only rational treatment of the disease must be on the broad lines which have been so definitely laid down for similar conditions in other organs and tissues. The author makes small claim to originality, and the book contains few records of original observations, but the work of others has been carefully reviewed, and the whole subject is dealt with in a practical and scientific manner. The chapter on the bacteriology of cystitis is of particular value, for as far as we are aware few English observers have followed this line of investigation, and few English text-books devote even one page to this important matter; yet it is only upon a due appreciation of the causes that rational treatment can be applied.

To the practitioner the most interesting part of the work will be the sections dealing with treatment; and here the one great principle is absolute asepsis.

Directions for the cleansing of catheters and for washing out the bladder are given most minutely. The advantages and disadvantages of the various antiseptics are given fairly and with clearness, but we look in vain for new light or suggestions to help in the treatment of those distressing chronic forms of the disease such as the tubercular.

The book is distinctly valuable, thoroughly orthodox and safe; moreover the author is able to give a reason for whatever statements he makes or treatment he employs.

New Productions.

"TABLOID" BISMUTH SUBGALLATE gr. 5 (0.324 grm.). (London: Messrs. Burroughs, Welcome & Co.).

The internal administration of bismuth subgallate has lately received considerable attention. It has been favourably reported on in various forms of diarrhoea and in fermentative dyspepsia. We understand that it has been spoken highly of as a therapeutic agent in typhoid, gastric catarrh, and in the treatment of Asiatic cholera.

Bismuth subgallate is insoluble in water or alcohol, and it is best administered compressed and in a dry state. The very rapid disintegrating property of "Tabloid" Bismuth Subgallate, and its great convenience, especially when, as in chronic cases, it is necessary that the doses be taken regularly and for a considerable period, make it the most reliable and acceptable form for the administration of the drug.

"TABLOID" HYPOPHOSPHITES COMPOUND. (Messrs. Burroughs, Welcome & Co.).

"Tabloid" Hypophosphites Compound provides a method of administering this combination which possesses obvious and specific advantages. The full therapeutic activity of all the constituents is obtained, and there is no danger of an overdose of strychnine either through a mistake in measurement or through precipitation.

Many patients who are actively engaged in business or professional life, and who cannot carry about the ordinary forms of medicine, can take "Tabloid" Hypophosphites Compound regularly and without inconvenience. For those patients who are ordered long periods of travel, "Tabloid" Hypophosphites Compound provides a means of prescribing the hypophosphites which is reliable and convenient.

Two strengths are issued, each in bottles of 25 and 100.

"Tabloid" Hypophosphites Compound, gr. 1-1/2, contains gr. 1-1/2 of Strychnine Hypophosphite, together with the combined Hypophosphites of Calcium, Potassium, Manganese, Iron, and Quinine, and is equivalent to dr. 1/4 of standard Compound Syrup of Hypophosphites.

"Tabloid" Hypophosphites Compound, gr. 3, contains gr. 3/4 of Strychnine Hypophosphite, together with the combined Hypophosphites of Calcium, Potassium, Manganese, Iron, and Quinine, and is equivalent to dr. 1 of standard Compound Syrup of Hypophosphites.

Pathological Department of the Journal.

SPECIMENS sent by subscribers to the JOURNAL will be examined in the Pathological Laboratory, and a report furnished under the supervision of Dr. Andrewes, at the following rate:

Ordinary examination, Bacteriological or Patho-	s. d.
logical, such as tumour, membrane, or sputum	2 6
Ordinary (qualitative) urine examination	2 6

Any further report will be charged at a special rate. If a mounted specimen be desired an extra charge of 1s. will be made. If a telegraphic report be required the cost of the telegram will be charged in addition.

Specimens must be accompanied by the fee and a stamped addressed envelope, in which the report will be sent as soon as possible. Specimens, with, if possible, a short history of the case, must be addressed to "The Manager of the Journal," with "Pathological Department" written in some conspicuous place on the wrapper.

On application to J. Russell, Museum Assistant, a set of bottles containing hardening fluids, and ready for sending away by post, can be obtained on remitting a postal order for 2s. 6d.

Appointments.

BILL, J. F., M.B.(Lond.), M.R.C.S., L.R.C.P., appointed Assistant House Surgeon to the London Temperance Hospital.

BLAKENEY, H. T. W., M.R.C.S., appointed Police Surgeon to the Dorking Petty Sessional Division, vice H. Chaldecott.

CORNISH, S., M.B., B.S.Lond., appointed Surgeon to the Steamship Historian, Harrison Line.

DICKSON, A. W., M.R.C.S., L.R.C.P., appointed Senior House Surgeon to the Royal Infirmary, Halifax.

EVANS, T. H. FENCOTT, M.R.C.S., L.R.C.P., appointed Medical Superintendent to the Small-pox Lazaretto, Rietfontein, South Africa.

HODGKINS, A. E., M.R.C.S., L.R.C.P., appointed House Physician to the West London Hospital.

WORTH, C. A., M.R.C.S., L.R.C.P., appointed House Surgeon to the Loughborough and District General Hospital.

Examinations.

UNIVERSITY OF CAMBRIDGE.—*Second M.B. Examination* (Part 2, *Anatomy and Physiology*).—F. M. Boulton, W. M. Fletcher, B. B. Sapwell, R. T. Worthington.

SOCIETY OF APOTHECARIES.—*Anatomy and Physiology*: S. de Carteret, C. D. A. Dowman, G. H. Watson. *Physiology*.—A. B. Edwards. *Materia Medica and Pharmacy*.—C. G. Meade.

Births.

CUTFIELD.—On June 6th, at Morton House, Ross, Herefordshire, the wife of Arthur Cutfield, B.A., B.Sc., M.R.C.S., of a daughter.

ECCLES.—On June 20th, at Hertford Street, Mayfair, W., the wife of A. Symons Eccles, M.B., of a son.

MACKENZIE.—On June 26th, at Lansdowne House, Ryde, I.W., the wife of K. W. Ingleby Mackenzie, L.R.C.P.Lond., M.R.C.S.Eng., of a son.

NEWINGTON.—On May 11th, the wife of C. W. H. Newington, M.R.C.S., L.R.C.P., at The Grange, Edenbridge, Kent, of a son.

REECE.—On June 15th, at 62, Addison Gardens, W., the wife of Richard J. Reece, of a daughter.

SURRIDGE.—On June 6th, at Knutsford, Cheshire, the wife of E. N. Surridge, M.B., B.C., of a son.

Marriages.

NEWBOLT—ASHBURNER.—On June 18th, by special licence, at St. Peter's Church, Kirk Onchan, Isle of Man, by the Rev. S. A. P. Kermode, M.A., Vicar, assisted by the Rev. Canon Savage, Incumbent of St. Thomas's, Douglas, and the Rev. F. Caywood Deardon, B.A., Vicar of Bamford, and the Rev. Henry Sharland, Curate, George Palmerston Newbolt, M.B., F.R.C.S., of 42, Catherine Street, Liverpool, only son of the late K. Kent Newbolt, Esq., of Weymouth, to Mary, only child of Robert Ashburner, Esq., of Douglas, Isle of Man.

ACKNOWLEDGMENTS.—*Guy's Hospital Gazette*, *Nursing Record*, *L'Echo Médical*, *St. George's Hospital Gazette*, *St. Thomas's Hospital Gazette*, *St. Mary's Hospital Gazette*, *The Stethoscope*, *Giornale d'Igiene*, "M.R.I." *Guyoscope*.